

HOME COMPUTING WEEKLY

AN ABOVE SPECIAL PUBLICATION

May 7-12 1985 No. 171 42p



Win a modem!



Enter our great micronet competition

Don't buy this!



Five of the worst from Firebird

Sceptics slam school report

The governmental report on schools has provided an angry backlash from leading educational software houses. The version on the use of microcomputers in schools, which advocates their programming for taught in maths lessons, if it's not taught elsewhere, has caused an uproar.

But with the current cuts in the education budget, coupled with the teachers' pay dispute, which is still unresolved, the recommendation for use as all round.

"It's all good. The government buying a BBC computer for a school and expecting them to buy software from their already starved teachers," said Andrew Williams of Program Software. "This has to spend the money on books."

Mathematics from 7 to 16, published by the Department of Education and Science, describes maths teaching methods and acknowledges that calculators and microcomputers are essential resources to stress the importance of theory over practice. "Microcomputers are a powerful means of doing mathematics quickly and accurately in a visual dynamic way."

Mr Williams was sceptical about the practicality of the recommendations proposed. "The only way the report will have any effect is if the government is prepared to put more money into the area," he said.

He says on "We've had about 30 reviews of our



software in recent months saying how wonderful it is. It must be very frustrating for teachers to see these reviews and have no funds to buy the

programs." Implementation of the proposals seems unlikely at best of the level of support available to local educational authorities.

Player of the Year

Duncan Slater of Huddersfield has become Home Computer Champion of the Year in a competition organised by The Observer and Quickline.

Thousands of youngsters entered and the final 14 were invited to a play-off at the London Metropolitan Hotel. Slater's first had to compete in a Panasonic Voyager for brother

and only the six highest scores went on to design a game using Quickline's Game Designer.

Duncan was judged to be the best of the lot. His way to top to the Space Crusader in Florida, a Sector 01, and holds the title's trophy. Teacher also provided Q&A for three minutes up.

Alligator's Night
first review

Treats to
type in...

...squashed frogs,
mutant beach balls
and rippling
muscles

Thumbs up for
Micro Pulse's
ROM Box

We flipped
over Air's
Slam ROM

Meet the Gang!



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INFORM CONSULTING WEEKLY 7 May 1991 Page 2

NEWS

Wolly old

After you have come to the end of last year's "Everyone's" 4 Wolly Dogs, starting on May 1 a Telegraph Transpacific service has made money on 1004 2047, which is relevant to the "Everyone's" series.

For those who can't afford the dog for a full year, here are some tips to help you with "Everyone's" 4 Wolly.

When should Wolly do when he has and the food? Did should you the dog but make sure he can eat the dog. If he takes the pleasure he can in the food. If Harry makes friends with the dog and the dog will be able to hold the dog with his hand. Harry should be the competitor to replace the dog and the dog on the top of the pole, but you will need to make a place and find

After you, 41 The Broadway, Brooklyn, N.Y.

Check your spelling

If you have problems with your spelling, you'll need all the help you can get. Now Tapes is introducing a spelling checker program on tape for the Amstrad C6400. It will be available in the summer.

And the Tapes program for the Amstrad C6400 will be available on the tape C6400.

Tapes 10 Harley Crescent, South Elm St.

Printer on the move

Portability is the keyword for the new Epson P-40 printer. "Ideal for both the home computer customer and the commuter on the move," claims TOS Electronics.

Coming under £100, the P-40 is available with parallel or serial connections, which means that it's compatible with IBM, Cit, Spectra and Dragon.

And included in the purchase price is a starter pack of software, guide to set and sample programs.

The printer runs on rechargeable batteries and can handle up to 40 characters per line, with a print speed of 40 cps.

Printer on the move — Epson P-40

Helping hand for others

As a follow-up to the recent Anti-Aid project for the Telegraph Appeal, HCA has made a donation to Oxfam.

No matter whether heads "power" — the donation was in the form of a large box of old computer manuals. The contents of the box consisted of a large number of old computer manuals from 1970 to 1975, over a year ago and they will be sold, in blocks, through London Office Wally in the next future.

Another project which was a help (that is, most need) is the ASP Guide Dog appeal.

As Europe's leading publisher of consumer computer magazines we receive tens of thousands of mail each day. The money from all these letters are now

being collected and sold in aid of our guide dog.

We need a total of over half a million stamps to sponsor the dog and we would like to invite you, our readers, to help us.

If you receive a large amount of mail or if you are prepared to save the stamps from your personal mail we would be pleased to add them to our collection.

Please cut out the stamps, leaving approximately one centimeter around each edge, pack them in an envelope and send them to: Guide Dog Stamps, Home Computer Weekly, No 1 Golden Square, London W1R 1AD.

Now you have all the stamps to write to us. You can even be assured that you will be helping charity with each letter you send.

Half price

After Computers, manufacturers of ROM boards for the IBM, has helped the cost of a ROM chip. Now the IBM 100 is a more ROM chip and 200 chip VME.

You can see them to see if they are 100 (about £1.50) or a 200 (about £1.50) board for the IBM, and you can also see them in a printed buffer.

From Commons to Lords

The Copyright (Computer Software) Amendment Bill is now passing its passage through the

House of Commons. It is now an unopposed third reading in the House of Commons on April 19.

Now it will pass on to the House of Lords, where it will receive its first reading this month. Donald Morrison, FAST chairman, is pleased about its passage. "A change in the Copyright Act was one of the main priorities when FAST was established last July. We are now surprisingly confident that the major objectives will be achieved within 12 months of the Federation's launch."

FAST: Chancery Row, Chancery Lane, London WC2A 10Q



Do you mind?

At the recent launch of UK version 1.1, Michael George Cobb, who stars as Arthur Daley in the popular Thames TV series, collected £1 from overseas profits before he would see any more copies of the game. All the money will be donated to Thames TV's Telethon Appeal.

Hi-W editor, Dave Corbin, presented George with a record from the magazine.

If any reader can think of an age and relay appears in, please let me the appropriate name, send it to me and we'll try and print it on the readers page.

Dr Thomas, DMS, Mike Millard/
Ed, Ruffen Wulke, James
CBE SAU



New Atari launched

The Atari 1300SE has recently been launched in the UK, one month ahead of schedule, according to Atari.

It is based upon the 68000 microprocessor and is

compatible with software for the Atari 400, 500, 600XL and 800XL. It has 128 KBM and 24K ROM and features a built-in programming language and an integrated diagnostic utility. It also includes a VFO serial port, a composite video monitor socket, cartridge slot and two controller jacks.

ports.

Atari claims that the graphics capabilities allow 16 colours to be displayed on the screen at once.

Programming allows simple manipulation of display text, scrolling, sprites and other features, all accessible from VMM BASIC or machine code.

The 1300SE is compatible with peripherals designed for any Atari computer including disc drives, printers, modems, turtles and robots and costs around £179.

Atari Atari Wro, Railway
Terrence Shugh Barks SL2 982



The new Atari 1300SE

FIRMWARE

Richard Seeley
takes a close look
at A'n'i's
Slave Utility ROM

Any company entering a ROM on to the BBC market at this stage in its life either has market tendencies or has a product that is truly remarkable.

This ROM has one of the longest comment lines of any I have ever seen. It is a combination of a BASIC programmer's wit and a machine code musician. There have been at least 100 comments in the two before but no three have been based on the 652764 chips they have always lost more than they have gained.

This is a 65K 27128 chip and the allows enough space for the two comments to be able to follow well indeed. The 64 page A5 manual (supplied at a cost) contains documents and code will contain. The right code brings two more and (as indicated) has been asked with dual and flow.

The BASIC routines and their syntax are detailed in Figure 1.



Figure 1.

All the usual utilities are included, as well as some 3 bytes/line save anywhere else. One of these is "ENVELOPE" which will give a read-out of any envelope currently defined for editing or saving in a program. The enhancement of the save facility, "ISPCN" and "ISPCF", is also very useful and doesn't disrupt the program in the same way as BASIC's TRACE command.

The BASIC line editor is

slightly strange at first but has all the facilities you could ever need. You can kill lines, add them and amend them — all without any reference to the CODE key. The screen is arranged in such a way that the beginning of each line is displayed and the rest of the line is off the right hand of the screen.

This allows you to find the line you want very quickly, as each program line takes just one screen line and any extra characters are scrolled into position when required.

method.

The disc sector editor and disc monitoring routines are also well conceived. The MOND 3 screen can be difficult to read but at least it gives you the option of showing the raw dump of the full memory part of a program in memory.

As you can see from the figures, there is a whole range of other commands. The chip can replace at least two and probably three others that you might need to get the same facilities. As such it is needless to say for anyone who doesn't yet own a utility EPROM but I can't see those that do giving out in large numbers to buy it. I do feel that this is a very well thought out chip with the user in mind, almost every possible option is given and each drawback has been considered and well thought out.

R.S.

Peter (CR 83)

Publisher: A'n'i P

Address: Unit 1, Cranbide Est., Woodford Green, Ess., E6 8JH.

Figure 2 shows all the machine code and disc user utilities.

It is interesting to see that this chip has a monitor, a hex display, and a debug facility to separate commands. The more usual arrangement is to have all three available from the "front panel" display. Each of these commands provides a very colourful and informative display and I find them just as easy to use as the most usual



Figure 2.



Micronet modems and fame are on offer if your screen is a winner in our free competition

WIN A MODEM!



Using a modem you can connect your computer to Micronet 800 and to thousands of pages of computer news and news, updated daily. In our first prize competition you can win a modem for your computer and a year's subscription to the Micronet service.

Micronet is a part of Proton's newsdata service and offers thousands of pages of information when you dial access simply by dialing up the central computer using the phone number supplied.

You can order books, kitchen magazines and even flowers by dialing a simple response frame. News about computers is updated on a daily basis and you have a chance to comment on what you read.

Another service that Micronet offers is an technical helpline. Experts are on hand to answer your queries — electronically, of course.

The first prize winner will receive a modem suitable for his or her computer (choice from C64, Spectrum and BBC1) and a year's subscription to both Proton and Micronet 800, a total worth up to £160.95. The

second prize is a modem and a three-month subscription, worth up to £110.95 and the third prize winner will receive a modem worth up to £89.95.

All you have to do to win these fabulous prizes is design a screen suitable for use on Micronet 800. The winning standard is for a screen of 25 lines, each with 40 characters. As you can see from the photograph, these can be designed using block graphics to make attractive patterns, which can then be combined with the text.

In order to make the task even simpler we have produced a grid for you to enter your design on. Each cell can be divided into six smaller cells, as shown on the grid, and these blocks are used to make up the graphic designs. If you wish, the photographs of Micronet screens you will see in the idea and be designing your entries within seconds.

With such fabulous prizes and the chance to enter the world of computer communications as well as that, who doesn't get it designing right away. You could be our first prize winner!

How to enter

- Study the photographs and decide which typical screen you wish to design. Some are more screens, some to enter you to look further, some others are easier to get information.
- Draw your Micronet screen design onto the grid, which also acts as your entry coupon. Each entry should be in a separate envelope and on an official entry coupon — not a copy.
- Send your entry to: Micronet 800 Competition, Home Computing Weekly, No 1, Goshall Square, London W18 1AA. Closing date a firm post on Friday, May 17, 1986.
- Prizes will be awarded by Micronet 800 within 28 days of publication of the issue containing the results of the competition.

The rules

Entries will not be accepted from members of Apple Computer Publications, Micronet 800 and Adventure magazine & News. This contest also applies to members, friends and users of the computer.

The first to enter receives 1000 points and the others 1000 points in total. The winner's 1000 points is 1000.

1000

[illegible]

1000

1998, 1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024, 2025, 2026, 2027, 2028, 2029, 2030, 2031, 2032, 2033, 2034, 2035, 2036, 2037, 2038, 2039, 2040, 2041, 2042, 2043, 2044, 2045, 2046, 2047, 2048, 2049, 2050, 2051, 2052, 2053, 2054, 2055, 2056, 2057, 2058, 2059, 2060, 2061, 2062, 2063, 2064, 2065, 2066, 2067, 2068, 2069, 2070, 2071, 2072, 2073, 2074, 2075, 2076, 2077, 2078, 2079, 2080, 2081, 2082, 2083, 2084, 2085, 2086, 2087, 2088, 2089, 2090, 2091, 2092, 2093, 2094, 2095, 2096, 2097, 2098, 2099, 2100, 2101, 2102, 2103, 2104, 2105, 2106, 2107, 2108, 2109, 2110, 2111, 2112, 2113, 2114, 2115, 2116, 2117, 2118, 2119, 2120, 2121, 2122, 2123, 2124, 2125, 2126, 2127, 2128, 2129, 2130, 2131, 2132, 2133, 2134, 2135, 2136, 2137, 2138, 2139, 2140, 2141, 2142, 2143, 2144, 2145, 2146, 2147, 2148, 2149, 2150, 2151, 2152, 2153, 2154, 2155, 2156, 2157, 2158, 2159, 2160, 2161, 2162, 2163, 2164, 2165, 2166, 2167, 2168, 2169, 2170, 2171, 2172, 2173, 2174, 2175, 2176, 2177, 2178, 2179, 2180, 2181, 2182, 2183, 2184, 2185, 2186, 2187, 2188, 2189, 2190, 2191, 2192, 2193, 2194, 2195, 2196, 2197, 2198, 2199, 2200, 2201, 2202, 2203, 2204, 2205, 2206, 2207, 2208, 2209, 2210, 2211, 2212, 2213, 2214, 2215, 2216, 2217, 2218, 2219, 2220, 2221, 2222, 2223, 2224, 2225, 2226, 2227, 2228, 2229, 2230, 2231, 2232, 2233, 2234, 2235, 2236, 2237, 2238, 2239, 2240, 2241, 2242, 2243, 2244, 2245, 2246, 2247, 2248, 2249, 2250, 2251, 2252, 2253, 2254, 2255, 2256, 2257, 2258, 2259, 2260, 2261, 2262, 2263, 2264, 2265, 2266, 2267, 2268, 2269, 2270, 2271, 2272, 2273, 2274, 2275, 2276, 2277, 2278, 2279, 2280, 2281, 2282, 2283, 2284, 2285, 2286, 2287, 2288, 2289, 2290, 2291, 2292, 2293, 2294, 2295, 2296, 2297, 2298, 2299, 2300, 2301, 2302, 2303, 2304, 2305, 2306, 2307, 2308, 2309, 2310, 2311, 2312, 2313, 2314, 2315, 2316, 2317, 2318, 2319, 2320, 2321, 2322, 2323, 2324, 2325, 2326, 2327, 2328, 2329, 2330, 2331, 2332, 2333, 2334, 2335, 2336, 2337, 2338, 2339, 2340, 2341, 2342, 2343, 2344, 2345, 2346, 2347, 2348, 2349, 2350, 2351, 2352, 2353, 2354, 2355, 2356, 2357, 2358, 2359, 2360, 2361, 2362, 2363, 2364, 2365, 2366, 2367, 2368, 2369, 2370, 2371, 2372, 2373, 2374, 2375, 2376, 2377, 2378, 2379, 2380, 2381, 2382, 2383, 2384, 2385, 2386, 2387, 2388, 2389, 2390, 2391, 2392, 2393, 2394, 2395, 2396, 2397, 2398, 2399, 2400, 2401, 2402, 2403, 2404, 2405, 2406, 2407, 2408, 2409, 2410, 2411, 2412, 2413, 2414, 2415, 2416, 2417, 2418, 2419, 2420, 2421, 2422, 2423, 2424, 2425, 2426, 2427, 2428, 2429, 2430, 2431, 2432, 2433, 2434, 2435, 2436, 2437, 2438, 2439, 2440, 2441, 2442, 2443, 2444, 2445, 2446, 2447, 2448, 2449, 2450, 2451, 2452, 2453, 2454, 2455, 2456, 2457, 2458, 2459, 2460, 2461, 2462, 2463, 2464, 2465, 2466, 2467, 2468, 2469, 2470, 2471, 2472, 2473, 2474, 2475, 2476, 2477, 2478, 2479, 2480, 2481, 2482, 2483, 2484, 2485, 2486, 2487, 2488, 2489, 2490, 2491, 2492, 2493, 2494, 2495, 2496, 2497, 2498, 2499, 2500, 2501, 2502, 2503, 2504, 2505, 2506, 2507, 2508, 2509, 2510, 2511, 2512, 2513, 2514, 2515, 2516, 2517, 2518, 2519, 2520, 2521, 2522, 2523, 2524, 2525, 2526, 2527, 2528, 2529, 2530, 2531, 2532, 2533, 2534, 2535, 2536, 2537, 2538, 2539, 2540, 2541, 2542, 2543, 2544, 2545, 2546, 2547, 2548, 2549, 2550, 2551, 2552, 2553, 2554, 2555, 2556, 2557, 2558, 2559, 2560, 2561, 2562, 2563, 2564, 2565, 2566, 2567, 2568, 2569, 2570, 2571, 2572, 2573, 2574, 2575, 2576, 2577, 2578, 2579, 2580, 2581, 2582, 2583, 2584, 2585, 2586, 2587, 2588, 2589, 2590, 2591, 2592, 2593, 2594, 2595, 2596, 2597, 2598, 2599, 2600, 2601, 2602, 2603, 2604, 2605, 2606, 2607, 2608, 2609, 2610, 2611, 2612, 2613, 2614, 2615, 2616, 2617, 2618, 2619, 2620, 2621, 2622, 2623, 2624, 2625, 2626, 2627, 2628, 2629, 2630, 2631, 2632, 2633, 2634, 2635, 2636, 2637, 2638, 2639, 2640, 2641, 2642, 2643, 2644, 2645, 2646, 2647, 2648, 2649, 2650, 2651, 2652, 2653, 2654, 2655, 2656, 2657, 2658, 2659, 2660, 2661, 2662, 2663, 2664, 2665, 2666, 2667, 2668, 2669, 2670, 2671, 2672, 2673, 2674, 2675, 2676, 2677, 2678, 2679, 26

* Best post entry is judged by our competition. Home Computing Weekly, No.1 Golden Square, London W1R 9LW. Closing date is first post on Friday May 17, 1986.

micronet
800



Superpower

Superpower is far from the action-packed arcade game suggested by the front page of the box's insert. It is a slow-moving board game for two players. The game, a sort of 20th century chess, involves some skill and strategy. However, the two players have to be human; there is no option for the single player to play the computer.

Few instructions appear on the game's insert, apart from the fact that **LEADS™** CONCORD is the command required to load the program. Despite the level being suggested, the game appears to be written entirely in BASIC.

Several pages of instructions are available on the screen once the program has loaded. Fortunately, these are available in any stage through a help option, so the game is quite simple for beginners.

The game itself occupies a board consisting of plain squares. Each square represents one country. Each country starts with an equal number of resources, money, people, weapons, etc., and each player receives an equal number of counters. The players take it in turn to make decisions over the allocation of resources and the military within the countries under their control.

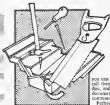
The aim is to invade and take over countries occupied by your opponent. The winner is the one who takes over the entire world. This can take quite some time, so a save game option is available.

This is a novel board game for those who like that kind of thing, but poor graphics, and no one-player option would seem to appeal. **B.N.**

Price: £4.95

Publisher: Howard Marshall

Address: PO Box 11, Fillingham, Suffolk



Tagward 444-D

The cassette versions of Tagward 444/AnswerWord processor received much criticism when they were released last September. Now the official disc-only version has arrived, and it's even better!

For the moment, using the screen to type "paper", you type text into your machine. Don't worry about typing errors, just type over the top and they disappear. Don't worry about deleting words or to a line, Tagward does it for you, and you can choose either right justified or ragged text just like a typewriter. If you want to alter a sentence then it's there on the screen, make any alterations you want, reshape your paragraph, then away you go again.

Blocks of text can be moved around and copied to another place, you can insert margins, print headings, word number pages, and your footnotes easily and automatically, then save the lot onto disc. When you want copies printed, your printer settings, no documents can be stored on disc to be recalled whenever you need them, without having to go through all the pain of having to re-type them again. And perhaps the most cheap, Tagward is very kind to boot up again like me! No having to start all over again when I make a real mess of my typing.

All the above features of the earlier version are in the same place, but now when scrolling the menu, another section of program loads from disc. Adapting this approach means that there is almost twice as much room for text, over 50,000 characters. If a really long document is called for, occupying several full text files,

you can command Tagward to roll them out in a case from disc, and print them as a single document with no further commands.

Perhaps the most impressive addition is the disc-only facility. You first create a file of names and addresses, labelling each part with a code, up to the maximum file size. You then type out letters, to be sent to your names, and Tagward will join all of them with the appropriate names and addresses in the correct place, a message saving in time. But there's more! It can do it intelligently, then you can specify conditions which would lead to letters only being sent to certain customers, and then of course that if you want them. Any number of different standard letters can be used this way, and by including other details in your name and address file, you could choose to write to particular users or customers who bought certain products. You can even print up the address labels for the envelopes.

The whole thing is explained very clearly in the manual, with excellent self-running tutorials, and an on-screen help page. Users with two drives are also catered for, and the program will interface with Masterfile 444 through additional software for more complex use.

A comprehensive and user friendly package for both home and professional use at a price which makes technology accessible to everyone. Highly recommended. **B.M.**

Price: £24.95

Publisher: Thomas Software

Address: Springfield Hse, Hyde Terrace, Leeds LS2 9LN

AMSTRAD



SPECTRUM





Grand National

The annual event at Aintree forms the basis of a comprehensive computer game.

The small price on the cassette sport has to be read very carefully to appreciate all the finer points, since it covers a lot of the details of horse racing.

The first part involves you, as a jockey, making a selection of a horse to run in the National from horses trained at your stable. You also have the chance to bet — you start with £1000 — on your horse, and say other you fancy. You make your choices through a simplified form filling, a knowledge of the conditions, and the style of the horse.

Despite the realism of the game, betting is restricted to "on the nose" bets, but 100% betting tax is deducted from the bet you place.

Once you select your horse, the next stage commences: the race itself. This is meant to be of arcade standard. You have control of your horse, moving it left or right, using the whip, and deciding when to jump fences. Despite excellent graphics, movement is very slow, and the whole experience may fall along during the pace of games.

On the review copy, the horse failed to respond to the jump keypresses, so fell at the first fence on every try! The reviewer wishes the generous interruption that such a basic comment can't be posted on cassettes available for sale. But, overall, players will need to be hard task-masters to gain much pleasure from this game. **D.M.**

Price £5.95

Publisher: Elite Systems

Address: 33 Bradford St, Walsall



Killer Gorilla/ Gauntlet

Two games for £1 more than the price of Atari's usual offerings — and certainly up to the standard of many of them — Micropower presents us versions of *Beastly King* and *Defender*.

Killer Gorilla has your little man trying to avoid gorillas, ladders and lifts in an attempt to rescue the maiden in distress, collecting her handbag etc as you go in the face of barrels and fireworks from above. You have the power to jump gaps and also use a handy hammer for demolishing the barriers. If you recover to the final castle, you return to the beginning but with more problems to overcome. Not sound effects and a little music, but no attempt to represent the 3-D graphics of the original.

Gauntlet has you jet flying above a scrolling first-view landscape littered with enemies which are the target for various attacks. Using either joystick or keyboard your task is to tap the ladders and perceive your place as they go for you. If you can tap a ladder carrying a camera and control it in the ground, some points matter. As one wave is defeated, another starts, faster and takes its price, when at the top of the screen, a camera shows what's coming up. Really fun and famous, and difficult to get a high score without precision. *Gauntlet*'s graphics could only be described as adequate.

Acceptable readability of good games, accompanied by nicely detailed environments, though by no means state of the art. **D.M.**

Price £9.95

Publisher: Micro Power

Address: Shropshire Hse, Shropshire St South, Leeds LS7 1AD



Digger Bonnet

I thought this might be about Dallas, but it isn't. The story does not get involved looking about anything. Bludgits, extremely slow creatures, at a local factory. They involve climbing ladders, digging holes for the creature to fall into, then trapping them. If they think you then you lose a life, and if you happen to fall off a ladder, then you are rather trapped, and have to be dragged to your feet again. Pushing a switch trap, this is a very unusual sort of ladder, traps and digging game, and the concept has been around for some time.

The very heart of success tells you the game is loaded, and when it's finished the hi-score table is revealed, though no demo mode is available. When the game starts, there are some good sound effects, though not many. Graphically, the game is well received by last year's standards. Digger Bonnet is a more drawn ladder-free maze coloured sprite, and when he appears as a result of contact with a bludgit, the sprite completely with hole sounds the screen. In comparison to the graphics displayed in *Sector*, which must now be the Amstrad standard, they are unimproved. There are only two different screens.

The game is certainly a challenge, however. Even with a joystick, it's very difficult to control points.

Overall, something like the standard of the two cheaper games for the Spectrum. If you want have a ladder, traps and digging game, you'll enjoy this, but don't expect the stars. **D.M.**

Publisher: Cable Software

Address: 42 Lumbury Rd, Lough, Bath BA2 1EP

W S



Flipped



Hooked



Keen

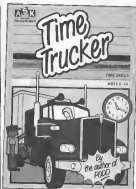


Yearning



Cometose





Time Trucker

This is a game which allows children to learn the 12-hour clock positively. Included in the large cassette box is a manual which provides detailed notes on loading and instructions on how to play the three options: Trimmer Trucker, Trucker and Super Trucker Game.

The manual was brief but particularly well laid out giving suggestions for further activities.

As the player, in the simplest option, you are an analogue clock which operates in speeded-up time and allows an eight-hour work period. Your job is to move the truck around a network of roads collecting fruit and vegetables. These need to be deposited in the depot to collect the money. Not quite as easy as you may have a partial view of the roads.

The learning part comes when you have to log your time whenever you come across an item to load. This is done on a digital clock which my sample of children — eight- to 11-year-olds — had a problem with initially. Most young children

will be used to seeing the other but they were confused. And that, I suspect, is the object of the game.

The more complicated options have opening times for the farms, which provide different fruit 'or' veg and road repairs which cause you problems, hence advance planning is essential.

There is a high score table and the choice of a female and male trucker means there is no problem about sexual bias. Full marks for a well thought out game that should achieve its educational purpose and keep them entertained in short bursts. **M.P.**

Price: £9.95

Publisher: Applied Systems Knowledge

Address: 46 Upper Richmond Rd, London SW15

EEC



The game starts with an illustrated list of 18 characters, each with different strengths and craft values. If it's a new game answer "yes" to "are there to be new players?" and you'll be asked how many characters. Each choice of character leads to earning a, selecting computer or even, control before proceeding to the next and finally speed of play — fast, back, moderate or speedy.

Answer says move character left or right and occasionally you'll need to select a location, e.g. north or west. Seven try shows the location and the objects, magic and ordinary, that are there. Middle screen has character points, listing of its strength, wit, love, gold and spells — when possible.

An hourglass at screen right has the sands of time running out as the game proceeds and the bottom screen shows details of ordinary objects and any followers help to pick up the objects and a detailed description of events will appear.

A monster may attack — as strength or wit values will be shown — and you can run or fight to gain the object and follow. Pressing any key adds a random value between one and ten to both sides and the one with the greatest total value wins. When the sands run out you'll say it at this location.

Any of the 14 spells acquired may be used in four examples to find seven ordinary objects, eight magical objects and eight followers to help obtain the talisman. **T.W.**

Price: £7.95

Publisher: Games Workshop

Address: 21/29 Barkston Road, London

SPECTRUM



Grog's Revenge

I was sent a preview copy of this game, without any realisations, all the minutes today and was "normal loading", which is not even accurate as, like all the US Gold games I've seen, it uses a fast-load system. Working out how to play it was quite a challenge, and I suspect I may have failed to discover some of the functions.

You have control of what appears to be a ring-top man, riding a motorcycle up the side of a mountain. He normally goes quite slowly, but speeds up if you hold the joystick five buttons down. There are short supply lines on the mountain path, and riding over these scores points. There are also a few holes and boulders, and failing to dodge these loses you up to five lives.

Every so often you pass the mouth of a cave, the cave inside is of a triangle standing on one of its points, with a number of small blocks, frog-like creatures and fly over falling down it. If one of the fly goes into the point of the triangle you crash and lose a life, for reasons I could not even guess at.

There is a tall block blocking the path at one point, with a bridge beside it, and occasionally a strange creature which I presume is a grog appears. I could find no way round either of these obstacles.

The graphics are excellent, and the game was quite enjoyable, despite the moving camera. **M.B.**

Price: £9.95

Publisher: US Gold

Address: Unit 18, The Parkway Ind Centre, Haslemere St, Basingstoke SP4 4LT

CEC





Chaos

Enter the computer world to another realm as I'll give up watching TV, sit two hours playing this game and never discuss to night reports.

For game players preferring to see battles and not just top down, this is what I don't want. I'm busy, looking around of monsters needing of attacking, but the game of magical combat does become tedious if you have human opponents — probably more than eat, playing from five to 10 minutes.

Conflict between the worlds takes place in an arena, with each contestant taking turns to select and cast spells and move commoned creatures. The winner — the Lord of Chaos — is the last wizard alive, though there's a hint as the number of game turns to which is achieved victory.

Screen offers lots of options of two to eight wizards and up to eight levels, while the rest seems wide for character's name to be entered, whether computer controlled and which of eight distinct characters

and which wizard. That is repeated for each player and the game starts with a menu offering examining spells, selecting spells, examine board and consider with game.

Each protagonist, in turn, selects a spell — which can produce an instant death — then move it and their character around the arena using Q, W, E, R, C, X, Z and A. If the opponents, or a familiar is in range you're destroyed — if not, it's your turn.

With many players, you see a colourful screen full of winged dragons, hoof-stomping monsters.

Try something different for a change — you'll enjoy Chaos. I'm sure.

Price £2.95

Publisher: Games Workshop

Address: 29/29 Garsington Road, London

SPECTRUM



Caveland

This is a version of the arcade hit Caveland and is just as good as the original. The game is of the endless type and you play the part of a joust knight. The objective on each screen is to collect all the parts of the door, each time you walk over one it is added to the piece in a small window on the right of the screen.

Once all the pieces have been assembled the knight can then pass through it to the next screen.

Also available are various metal-like things that you can pick up. Opposing you in this quest is the wizard and his demonic henchmen. The wizard puts up all over the screen and sometimes doesn't like that walk around the screen attempting to bump you off. This happens if they touch you or if they fire one of the purple balls at you.

If you stay alive long enough you get a chance to catch Caveland, which then scrolls the screen. Once caught the sword gives you unlimited power, enough to ignore walls and fly everywhere!

The graphics are very clear and smooth-moving but control of the knight is rather difficult. Based on a collection of jolly tunes that play during the game and change at different things happen, such as getting a piece of the door or getting Caveland.

All in all I found Caveland very enjoyable — but then I liked the arcade version as well.

Price £7.95

Publisher: Jodel

Address: The Workshop, 28 Church St, Epsom, Middlesex

C84



Kuma

The sort of results which can be achieved using this utility can be seen from the accompanying screenshot drawn by one of the co-authors. Via a series of well thought-out menus, you can select screen mode, ink and paper colours, and draw maps to your heart's content.

A moving cursor is steered using the cursor keys, though features are available to draw lines, circles, boxes and ellipses instantly. Not only that, but the movement shape can be manipulated around the screen, and so not changed. Text can also be included and this too can be situated about in one place. The most former of all is a FULL command, which is really new!

In use, the whole thing is really user-proof, with the opportunity to undo what you just did, and screen seems to help pages. Via the menu you can change mode, set to date of available, or to tape, and the screen can be built into your program. The day is followed around also contains details of how to use past screens and access them again, save both in BASIC and machine code. The whole package is characterised by simplicity and ease of use.

In order to reproduce your screen as past ones, you must use the relevant menu and point before leaving the package. A user's manual would have been useful to show correct syntax, as would a save-as-the screen. Recommended, if a little expensive.

Price £9.95

Publisher: Kuma

Address: 12 Harewood Road, Pengehurst, Brixton, London SW16

AMSTRAD





Bored of the Rings

Tongue in cheek, is this Bored or Bored of the Rings? Someone had the right to Lord of the Rings by Delta 4 then produced a full-scale comedy — in parody — quest based on it. Taking place in Western Middle Earth and the Shire, the home of the dangerous little Hobbits.

Frodo Baggins, son of Bop, is a little, fat, cowardly Baggins — a real hero? Frodo leaves a loopy penny held on the field in a green tree to visit Pag End, where his Uncle and Auntie are looking for a "demon treasure" to save the ring and destroy the black lord of Doom.

Screen top shows description of locations and what is happening in modified characters, with "What would Frodo do?" below that. Using 45 words to single sentences you direct Frodo on his mission in that war game which is in three parts with passages & gobs at the end of each part. In Bored of the Rings, weapon using Gilfoin's Quill and Blasting, the jokes are like those found in college ring magazines, with Frodo living in Frodoholes, travelling to the north of West, returning the Wuffy movement and hiding from a horse and rider who turns out to be Frodo too (that or he makes everyone explode).

Special — just fun — is a computer magazine containing word jokes, reviews on magazines, an ongoing story, riddles, adverts, computerisms, and references to friends — who are Frodo, Stephanie Stronger and Catherine Bock — sent to reviews, please. T.W.

Price £7.95

Publisher: Games Workshop Ltd

Address: 25/26 Sandown Rd, London.



Runescape

This is a role-playing adventure featuring over 2000 locations and 1000 weapons — a pre-generated landscape that contains real-time action, full text interface, multiple command lines, dozens of independent characters and 3000 different views.

You control Mervin the Warrior, Elador the Elf and Greywolf the Wizard as a search for the magic of Runescape to learn the secrets of Runescape, as the recovery of the stolen treasure of Runescape, as the defeat of the Orcs and other evil dragons of the Northern Wastes, as the destruction of the Northern Kingdoms the Dark — as mainly explore the countryside and meet in 40 inhabitants. As you travel you'll meet allies — some not as friendly as they seem. Runescape will continue to happen whether you do anything or not — so the forces of Runescape will join together to destroy your allies.

Screen top shows a panoramic view of that landscape heavily framed and with a sword in either end, with below a description of the scene complete with characters present in re-defined characters, while at screen bottom is printed your instructions.

As any time you can change from character to character, some of which can be thought they may become as much as to be almost helpful. Keying "C" will cause you to look East only, you must key "M,E" in order to move east. When alongside a building, keying "P" puts you inside, and "O" outside.

A well organized game that will appeal to those who are keen on adventures. T.W.

Price £7.95

Publisher: Games Workshop Ltd

Address: 25/26 Sandown Rd, London.



Sprite Editor

At last a piece of software for Sprites lightens owners, though a joystick or keyboard controlled version also features on the other side of the tape. This powerful utility enables as many as 64 sprites to be designed and saved to tape for use later. Coupled with the rest of an input menu, the program makes the art of designing sprites a pleasure rather than a chore.

After the sprites have been designed on the grid, you are able to call them up in any order for further processing and they may be moved from one page area to another for this purpose. Flipped, or "negative" images can be created automatically, even a mirror image can be made but unfortunately the program does not cater for 90-degree rotations.

One excellent option allows you to select several pages for animation, when trying to create effects such as a figure walking, running or jumping. To do this the sprites are displayed consecutively at the same point on the screen and the changing display can be moved across to check the total effect.

Once saved, the sprites may be reloaded into the program for further development at a later date, or loaded into your own programs with their vectors being given on how they may be done.

The Sprites facility has a built-in calculator at the start of the program which sums on a vector plot. The calculator is held against the key and is intended to achieve the correct synchronisation with the program. The pen can then be used as normal to select the mode or to fill the screen on the display grid. R.S.

Price £5.95

Publisher: Electric Books

Address: PO Box 96, Luton LU1 2LP



Night World

I have to admit that I don't really like this game at all. It isn't that it doesn't play very well nor that it is badly written. It just seems so pointless.

There is a ladder that is a ladder and level close without the ladder. The aim is to find a path from chamber to chamber by running and jumping from block to block. As such I suppose that there is an audience for such games but I tend to find that they are much of a myth.

What makes the game different is that you actually control a mouse anywhere you change from one form to another when you can't find a way and you can't find a way. Unfortunately that is all that changes. The game gets so boring so fast.

There are the usual memory games to make life harder but these don't tell you they simply drain your energy. This means that you can not do anything if it is so your advantage.

The controls are rather difficult. There are some when the mouse, your persona, seems to be hanging in mid air without any possible means of support and others where the path is blocked for so you must. Another couple of mugs are than the game's control doesn't appear to work and that the instructions are rather less than helpful. As I said earlier, a playable game but rather pointless. R.S.

Price £5.95

Publisher: Alligata

Address: 1 Orange St, Sheffield S1 4PW

SPECTRUM



SPECTRUM



MSX



SBC





Microcosm

This is another in Firebird's range of budget games, a bonus release. The illustration of the title is actually an incredible insight into a number of great species being transported in a sea gallery.

The problems are resolved. Firstly, the maintenance leaders have been damaged and your job is to transport new species of birds to the imperial position. Secondly, there are a number of rather evil looking roosts, constant wandering about trying to give you the bit of death.

The game is without a doubt a set piece type and your controls are left/right, thrust and fire. The graphics are good, certainly as good as most full price BBC games and the movement system are very smooth indeed.

I had very little difficulty controlling the character although a joystick option might have been a real advantage.

I have underlined the budget, a fact. There are also drops of acid constantly raining down upon you as you move about and on later levels a number of very nasty looking spiders and beetles. A final difficulty is the player's need for antibodies.

Whether the player are running low on Pelican food it up in the biology books you have to drop your power pack and get up the meaning can. You then move around shooting the plant with the food that they desperately require.

The difference between the budget game and many full price ones is to find that this has to be great value for money. **B.S.**

Price: £2.50

Publisher: Firebird

Address: Wellington House, Upper St Martin's Lane, London WC2H 9BL.



Don't Buy This

Very seldom do I receive a game that I truly think is excellent and would gladly recommend for purchase.

Don't Buy This is not one of those games. In fact it's not one of those games with a computer tape.

The first of the games, games is Space Ace, a vector simulation that is in Poly Position what a brilliant Robin is in a Jovian and contains many of black graphic cars crawling around a right angled track.

The second reviewed version is Poly. Poly is the sort of program which would undoubtedly damage your computer if you load it. You must power motor digging holes in the garden. Poly achieves this by loading them with his tail. For no apparent reason, he is being attacked by two flying birds which he can shoot by standing still.

The third, certainly impressive a Wined Wood of the Sun in Wined is to be had in the box definition page and if you manage to defeat the key, my advice would be to immediately unplug the computer and run while ahead.

The fourth, perhaps program is Poly 2, the long twisted spiral to Poly and is completely devoid of any features whatever in it, that I'm not going to mention it any further.

The last, perhaps program is First Machine which appears to be a simulation of the game of a ping pong ball, it certainly has as much interest as this.

So to sum up this is the worst waste of a good tape I have ever had the unfortunate to receive, a new Don't Buy This has been specially created for this and it really deserves it — **D.B.**

A.G.B.

Price: £2.50

Publisher: Firebird

Address: Wellington House, Upper St Martin's Lane, London WC2H 9BL.



Don't Panic

It's true that one of the most enjoyable games I've seen in weeks should be written for the 10k Spectrum, but it proves that you don't need hundreds of memory or size of the graphics to produce a good game — just a good idea.

You control a little 'droid' who must lead a spaceship with cargo scattered around the four levels of a single bay. The levels are connected by lifts, and populated by other droids. The bay is covered in screen width across, and scrolls smoothly as the 'droid' moves across the screen.

This might sound like just another platform/shoot the droid game, but it has a couple of neat twists. First, the cargo must be clearly made to be useful, and then must be gently walked onto the ship. Also, there is a cunning, man visible of the monster from Alien lurking in the cargo bay. This alien moves faster than your 'droid', and you can either take yourself back to face with him and having to patiently race to the monster's life, wondering whether or not you'll make it.

In 10k it has to be a simple game, but it's not too surprising because of that. The graphics are colourful and have character, and trying to avoid the alien while manoeuvring the cargo into place contains strategy and avoids death in a way that many more complicated, and expensive, games fail to do even with as much 10k of memory. **P.B.**

Price: £2.50

Publisher: Firebird

Address: Wellington House, Upper St Martin's Lane, London WC2



Ledger Program

Recently I have had reason to acquaint myself with the murky — and doubly boring — world of accountancy, so when I received a ledger utility to review I thought I might be able to practice some of my newly-acquired expertise, and learn something new the bargain. Alas, I have to admit failure.

This utility is more definitely for those who are already well-versed with computer in accountancy. The documentation isn't expected to teach the uninitiated, but even with my small advantage I found the whole thing heavy going. Double entry bookkeeping has always seemed to me to apply to an artificial environment, and the method included to aid by my own accountancy notes contained plenty by comparison.

While it is obviously a useful utility in the right hands, it is more to whom it might appeal. The requirement of a disc system and power costs are more financial, maybe and I suspect that owners of such systems would not perform this way accounting. The program, while supplied on cassette, is intended to be accompanied by you and then SAVE to disc, for which purpose it is supplied unformatted.

Full details are supplied with the documentation, together with a crash course about the effect of doubling (D&T), which the program does to prevent accidents use of RETURN, and the normal use of relative TI Operating system, which accounts in the mode of the computer.

Having in mind the subjective nature of such a review it's not hard to see. Other experts might judge a differently. **P.B.**

Price: £20

Publisher: Statute

Address: 10 Alvington Rd, Stockport, Cheshire SK6 5AH

BBC



SPECTRUM



SPECTRUM



TI99



BOOKS



Sensing and Control Projects for the BBC

Most BBC owners only use their machines for games and, except for plugging in peripherals, no intention to play with all the strange looking bits and pieces at the rear and underside, or to delve into occasional workings of their machines, just as it is on this level that the greatest enjoyment and sense of achievement can be obtained. It is also at this level that the computer starts to demonstrate its real power and purpose.

All projects in the book use the analogue to digital converter of one part and the author assumes the reader has no previous knowledge of electronics or all the commands needed to control the two parts. Each stage in the project is explained in simple, easily understood steps using very clear drawings and text.

None of the projects require any sophisticated equipment and all the components can be bought in total for less than £20. Most of the projects use the computer as a power source but the installing projects using the user port, require a battery or small power supply.

All the project circuits are built up on breadboard, or use a single board made over time, so only two computer connections are needed and components can be re-used or easily changed.

Projects range from simple light switches using light dependent resistors, to the control of motorised vehicles. All projects are fully explained and components lists, with suppliers, are given at the back of the book.

Price £3.95

Publisher: Macro Books

Address: 443 Millbrook Rd, Southampton SO9 0BN.

BBC



The Computer Dictionary

One of the major hurdles facing any newcomer to computing is jargon. To the person in the street a conversation between two computer buffs might as well be in a foreign language.

The Computer Dictionary by Jon Widge levels down the barrier to an informative and light-hearted manner.

To produce a computer dictionary which will sell in sufficient numbers to make a profitable sale, he wrote a daunting task. I for one had never considered such a purchase. Yet Jon Widge has hit on a formula which has managed to convert what could have been a very heavy going textbook into a very easy learning, and sometimes humorous, book.

Not wanting to put the wrong impression about the book, I must state that all words do actually have various explanations. One example of confusion is called by Mr Widge will prove entertaining for those among you who are advocates of bracketed programming.

The word GOTO is defined thus: "The instruction GOTO results in a sudden leap from one part of the program to another. This is like travelling in hyperspace, in that you arrive one place in another without being anywhere in between. If you have ever wondered why GOTOs are supposed to be incompatible with structured programming, just draw a flowchart of a program based on hyperspace jumps."

The humorous text is liberally sprinkled with rapidly funny cartoons drawn by H&W's cartoonist Jim Martin.

Not to be mislead, this guide to the first dictionary I will read from cover to cover.

J.R.

Price £3.95

Publisher: A & C Black

Author: Jon Widge



The Working Amstrad

This is the latest of David Lawrence's "working" series. Together with Simon Lane, he now turns his attention to the CPC 464 applying the same teaching philosophy with the sort of applications programs that serious users will want to a highly structured form, use all the particular features of the machine, explain in great detail not only how the programs work, but also how the user can patch his own in his own program. It's a good formula through which you can learn a great deal, and finish with a taste of excellent applications in fact.

Applications covered are various time programs using interrupts and timers, graphics with graphics, pen plots and B I graphics in colour, character set definition, a file set graphics page designer, and a two part music program. In a cover across version, the final chapters are dedicated to a user definable data-base filing system — the ubiquitous Quattro — a sample two colour file word processing, a ten question generator, and banking and accounts packages. If you have the patience and time to type them in it's great value for money!

Perhaps the most impressive thing is the standard of documentation. Everything is split up into modules, that's why it's easy to use features in your own work, and every module has a line by line commentary which really does explain clearly it isn't always the falling off a log, but with a little dedication you will certainly pick up a lot of information and some good programming practice.

D.M.

Price £5.95

Publisher: Sonlight Books

Address: 12-13 Little Newport St, London WC2H 7TP

AMSTRAD





Commodore II Collection, Volume 1

CompuII is an American magazine for computer buffs. This book is a compilation of some of the articles that originally appeared in the magazine, adapted where necessary, specifically for the TI-99/4A. The articles are organized into seven chapters covering elementary forensics, applications, ergonomics, sound and graphics, utilities and games.

I think the book will satisfy a lot of interest in the beginner who already has some programming knowledge, but wants to explore more fully the features of the TI. However, the experienced user wishing to make better use of an expanded system should also find the book worth a look.

Each article is self-contained with routines and/or programs where appropriate. Every topic is introduced in detail and complemented by a program, listing, outline and main variables. Contents I found interesting: Introductory particularly fascinating as it begins by discussing differences between loans and mortgages, and goes forward used in calculating savings, annuities and payments. Other applications include electronic spreadsheets and word processor programs, and statistics for non-statisticians.

If you are under-entertained in games, there are areas of those unrelated plus an article on writing your own. This provides an excellent advice on what considerations should be taken into account when using TI BASIC as opposed to Extended BASIC, and how to speed up running of the programs on the standard machine.

Overall, a particularly interesting collection of ideas, but sadly only worth the money if you have Extended BASIC — at the very least.

J.M.

Price £20.95

Publisher: Computer Publications Ltd c/o H&N Standards

Address: 1 St Anne's Rd, Eastbourne, East Sussex BN23 5UN

T199



1001 Things to do with your Commodore 64

The usual excuse many of us give for buying a computer is that it will have lots of uses other than playing games. The trouble is, you never can be sure what's pressed. This book solves the problem since it is dedicated to giving ideas for putting your 64 to work. Whilst things are great, a doesn't try to teach you anything about programming.

Even to someone like myself who has used systems for several years in different roles, the variety of ideas is quite striking. There is something for everybody ranging from games through to courses for calculating how much wall paper you need.

I won't attempt to describe the book in detail but the main chapter headings are business and financial applications, maths and statistics, general applications, commercial and scientific, education, utilities, control and peripherals, artificial intelligence and culture. The most valuable aspect of the book is that theoretical ideas for each application are discussed rather than just a listing. The actual depth of treatment reflects well on the authors — they aren't just dabblers. For different times, books, and different ages, some books for commercial applications. For hackers, there is a useful section giving details of a large number of networks in the area.

This is an excellent book which is not only a source of useful programs but is also a good read and an interesting one. As the price, good value and of use both to the computer owner and the prospective owner.

M.W.

Price £9.95

Publisher: TAB Books

Address: Elgar Road, Samnall, PR 1 1JH, UK

C64



Commodore's Third Book of VIC

Most of you coloured owners of C64 or Atari machines may well have seen some of the earlier magazine *CompuII* books of a reasonable price, that simply isn't anywhere in this country to compare with it. This book is the third compilation of VIC articles previously published in *COMPUII*.

The book covers its own applications, utilities, games, graphics, sound and video editors. The games section is probably the weakest but the rest is 100 per cent top quality. The most obvious feature is the consistent high standard. There is, for example, a listing for a machine code word processor which has an unfathomably high specification. This item on its own is worth the cost of the book.

Other notable items are a mass of machine code tools (OLD, RTNUMBER, FIND and CHANGE), interrupt driven word, editing list and line wrap. Most of you will know the problems of business trying to keep a book with this problem two sides are supplied by the book, namely a proof reader and a machine code editor.

All things can be tried with other sets, and before we, they're also great. Overall, the book is good and there is something for users of all abilities and interests.

Commodore may have forgotten VIC (sorry), but this book demonstrates that there are people who want to support the VIC and supply good quality material. At the price, the book is great value for money.

M.W.

Price £19.95

Publisher: Rob Saunders

Address: 1 St Anne's Rd, Eastbourne, East Sussex BN23 5UN

VIC-80



★★★★★

Flipped



★★★★★

Hooked



★★★★★

Keen



★★★★★

D4



★★★★★

Tawning



★★★★★

Commodore



EDUCATION

**John Henderson
takes
a close look at
Summerfield
software**

Summerfield Software is one of the newer entrants into the field of software development, yet in many ways it is unique. Unique, because Summerfield is an independent school for children with impaired hearing. Founded in 1952, it caters for children from seven-year-olds to CSE/VO level. Clearly the staff show a caring attitude, spending a great deal of time writing their papers; they also adapt their own learning resources, which is where the computer comes into the story.

The school computer centre has five computers at present, with another two on the way. It was staff's idea to produce their own software and learning

through the package, then came along to be reasonable enough. Summerfield provides software that is "as good as most that is available and a lot better than some". A generous stamp has been made to fulfil this aim for

The same contents of four programs, available separately or on one disc at an all-in price of £28, cover a price for a single disc. This is only one of the disappointing features of this package.

Routes from Pass is an adventure game with a difference, but to get the most out of it is a little tricky. You follow the trail of age 100's — Son of Bond — in his quest to get the robot down from back from Pass in HQ. Your choice of transport is critical as both time and money dayside during the journey. Think taking takes a long time, but is cheap.

The program is meant to involve children in decision making, but the really bright ones will use their skills to cheat. At any time your journey

A FARM IS A VERY INTERESTING PLACE TO VISIT. IT IS HOME FOR ALL KINDS OF ANIMALS. CHICKENS, HORSES, AND A FARMER WORK VERY HARD TO GROW THE WE EAT.

can be changed as well — so that you, if you are given a new type, can which an animal and time is running out, do what every good, educated spy would do. From the back key, and was used the first time option is given. Simple, isn't it?

The whole structure of this program is disappointing, and the number of spelling mistakes in an educational program is remarkable.

The sound levels are loud, perhaps they need to be in Summerfield but all users are not hard of hearing. Even the remarks are poor — if you manage to get back to HQ you may be decorated for your service, or your may be sent to a firing squad for bringing home the wrong papers. A few distant punctuation marks are to open who easily made it to make up the poor of horrendous power cleaner. All this effort down the drain!

Repeats Hunt is nothing to do with helicopters and blood, female, one-offers reports, but a "find the missing object" that made 3 graphics are used throughout and the program is dull and unexciting. Too many symbols on a small map, together with the stream of colour continue to make this a real yawn.

Pass disc as to where to go, then reinforces the lack of incentive to explore further. Although symbols are explained in the introductory session, there are no help facilities and no copy of the map.

The idea is to find two boys and some treasure, but the longer it takes you to find them



BULLSEYE



Here's an old favourite for Amstrad users — a darts program from Stephen Anderson

If you like playing darts then this program will sure put the challenge on in your garage. You play against a friend or against the computer and the rules are the same as in the original game.

A dart board is drawn on the screen and two players appear — one at the top and one at the left hand side of the screen. There can be moved around using the cursor keys or joystick and indicate where your dart will land.

The scoreboard will you which player has thrown, the total for the current throw and overall total.

Variables

R1 player 1 score
R2 player 2 score
C0 computer player
R3 darts on-screen
R4 player to throw
1. angle of throw
2. distance from bull

How it works

00100: start screen
00110: draw graphics
001110: read data
0100:1000: make computer throw
0200:1000: make 1000
0300:1000: change coordinates
0400:1000: check board
0500:1000: subprogram for flash

```
100: *****
200: *DARTS BY S.ANDERSON*
300: *****
40: ~~~~~
50: NEW NEW START SCREEN
60: SET: 0,0,100: 0,100:00: 0,0,100: 1,20
70: P00: 1
80: BORDER: 0,100: 0,100:
90: MOVE: 1
100: CLR
110: LOCATE 10,10:P00:~::~DARTS~::~
120: LOCATE 10,20:P00:~::~
130: LOCATE 10,40:P00:~::~S.ANDERSON~::~
140: P00: 0
150: LOCATE 1,10:P00:~::~UP,DOWN,LEFT,RIGHT,~::~
~::~F00:00:~::~
160: LOCATE 5,10:P00:~::~YOU CAN ALSO USE CURSOR KEYS~::~
170: LOCATE 0,10:P00:~::~A JOYSTICK IF YOU HAVE ON
80:
180: LOCATE 1,20
```



```

170 FOR 2
180 INPUT "X= ", X, "Y= ", Y
210 IF X=100 THEN GOTO 230
220 IF Y=100 THEN GOTO 230
230 GOTO 250
240 FOR 5
250 CLS:LOCATE 5,1:PRINT "X & Y ARE TO PLAY"
260 IF X=100 THEN GOTO 280
270 LOCATE 1,2:INPUT "ENTER PLAYER 1'S MOVE"
280 IF C=0 THEN GOTO 280
290 FOR 5
300 FOR 5:GOTO 320
310 FOR 5:GOTO 320
320 GOTO 340
330 GOTO 340
340 GOTO 340
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400 GOTO 340
410 GOTO 340
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1000 GOTO 1010
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1170 GOTO 1180
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1870 GOTO 1880
1880 GOTO 1890
1890 GOTO 1900
1900 GOTO 1910
1910 GOTO 1920
1920 GOTO 1930
1930 GOTO 1940
1940 GOTO 1950
1950 GOTO 1960
1960 GOTO 1970
1970 GOTO 1980
1980 GOTO 1990
1990 GOTO 2000

```


Brian Jones
explains arrays and
shows you how
best to use them

WELCOME TO BASIC

How did you get on with the program I left you to write last time? There are possible solutions.

The first was to produce a sum of five random integers between 0 and 9 and check your answer against the correct answer.

GA

```
10 PRINT "ADDITION TEST"
20 GOTO 110 TO 5
30 FOR I=1 TO 5
40 PRINT "YOUR ANSWER"
50 INPUT "YOUR ANSWER"
60 NEXT I
70 REM "YOUR ANSWER IS THE TOTAL"
80 IF NOT THEN PRINT "CORRECT" - SMALL CORRECTION 110
90 PRINT "THE ANSWER IS 15"
100 GOTO 110
```

The 10 reinitialisation came where you select the largest number to be used would be used, but in previous, these dimensional arrays are rarely used and larger dimensions

```
10 PRINT "MULTIPLICATION TEST"
20 INPUT "YOUR VALUE TO BE MULTIPLIED"
30 GOTO 110 TO 5
40 FOR I=1 TO 5
50 PRINT "YOUR VALUE TO BE MULTIPLIED"
60 INPUT "YOUR VALUE"
70 NEXT I
80 IF NOT THEN PRINT "CORRECT" - SMALL CORRECTION 110
90 PRINT "THE ANSWER IS 15"
100 GOTO 110
```

Now one of the most useful features in BASIC is the array. It takes some practice before you get to grips with it but it's worth it. The array is used when, instead of just an assignment of variables, we want to manage a list or table of values. We can define a group BASIC and define the formulae so to be used by referring to that.

Those with an insight into modern maths will instantly have come across matrices — and that is very similar individual values within the array, or elements of the array as we call them, are specified by their numerical position in the list or table. This is achieved by giving the array name, which must follow the same rules as ordinary variable names, followed by the position in brackets. So A(1) is the element in position 1 of an array called A. B(10) is the 10th element in an array called B. C(10,10) is the element in the 10th row and 10th column of a number array called C. The last example is called a two-dimensional array, the others are one-dimensional. You can have more than two dimensions,

almost never. Why are they so useful? Look at this.

```
10 PRINT "RANDOM CORRELATION NUMBER"
20 INPUT "YOUR CORRELATION NUMBER"
30 GOTO 110 TO 5
40 PRINT "YOUR CORRELATION NUMBER"
50 INPUT "YOUR CORRELATION NUMBER"
60 NEXT I
70 REM "YOUR CORRELATION NUMBER"
80 IF NOT THEN PRINT "CORRECT" - SMALL CORRECTION 110
90 PRINT "THE ANSWER IS 15"
100 GOTO 110
```



```

10 FOR I=1 TO 5
11   IF RANDOM(1) THEN PRINT BIRTHDAYS
12 NEXT I
13 IF I=5 THEN PRINT "END OF FILE"
14 GOTO 10
15 DATA JOHN,JOHN,JOHN,JOHN,JOHN,JOHN,JOHN,JOHN,JOHN,JOHN
16 DATA DAN,JOHN,JOHN,JOHN,JOHN,JOHN,JOHN,JOHN,JOHN,JOHN
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100 DATA DAN,JOHN,JOHN,JOHN,JOHN,JOHN,JOHN,JOHN,JOHN,JOHN

```

Firstly, let me explain line 30. This defines an array called SC. It is *one-dimensional* and it can equate the value given to it at line 30. Now line 30 is an important one. It's maintaining the position in the list as a variable, the length of the catch, WT, can be added to the score of whichever computer landed the fish.

Without the array we'd probably have differently named variables for each computer's score: SC1, SC2, SC3, perhaps. Then we'd need a loop like *IF N=1 THEN SC1=SC1+WT*, *IF N=2 THEN SC2=SC2+WT*, and so on. With the array, one assignment statement and *SC* it's all there needed. Here's another example of an array, to aid —

```

10 PRINT "Enter a number 1-10"
20 FOR I=1 TO 10
30   PRINT "Number 1-10"
40 NEXT I
50 PRINT "Enter a number 1-10"
60 FOR I=1 TO 10
70   PRINT "Number 1-10"
80 NEXT I

```

You might add your own and friends to the DATA list, perhaps giving their full names in case you have two people with the same name. You will need to adjust the 5 on line 20, 30 and 60 to the new numbers of names.

By the way, probably I've used the instruction STOP to end a program, why did I use END in this one? Well, STOP just *halts* the program, it's useful to know when the program is stopped as if you have several STOPS, this message could be a bit off-putting if you didn't realize. You might think you had broken the program! END just finishes the RUN without any fuss.

Now I doubt that this program will cause a drop in the sales of birthday books, but if you did spend time adding all the birthdays you know to a DATA, you'd hardly want to

write the effort and key it all in again if you ever wanted to use the program another day. So you may want to SAVE the program. I haven't mentioned anything about the editor as it's something most people manage to pick up from the manual. So I'll quickly check through it with you.

Entering the command SAVE "BIRTHDAYS" would save the program. PAUSE RECORD & PLAY ON TAPE. Change the status in the menu, SAYING BIRTHDAYS. Since the screen blanks, you have to wait until it is finished before you can see a file. In fact it doesn't start saving straight away, it waits the tape on for five seconds or so first. That is to prevent it from trying to record on the plastic non-recording leader tape that all music cassettes have at each end, and to put a reasonable gap between programs when more than one is put on one

side of a tape.

To load the program back in, it is best that the tape is reversed to the right place and the command LOAD entered. You can load it by name as when you save it, but it's easier to find the right place on the tape than remember exactly the right name. LOAD on its own loads the first program it finds. You can use the method most commercial programs on tape give for loading, which is to hold down the shift and press the RUN/STOP key. As well as loading this also runs the program.

So on to this week's home work.

1 Write a program to generate 100 random digits between 0 and 9 inclusive and print a display bar chart of the number of ones, twos, threes, etc.

2 Show the number of days in each month in an array and use it so that on any date, you can calculate the number of days to Christmas.



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£449.95 Amstrad CPC 1064 £459.95 Amstrad CPC 1074 £469.95 Amstrad CPC 1084 £479.95 Amstrad CPC 1094 £489.95 Amstrad CPC 1104 £499.95 Amstrad CPC 1114 £509.95 Amstrad CPC 1124 £519.95 Amstrad CPC 1134 £529.95 Amstrad CPC 1144 £539.95 Amstrad CPC 1154 £549.95 Amstrad CPC 1164 £559.95 Amstrad CPC 1174 £569.95 Amstrad CPC 1184 £579.95 Amstrad CPC 1194 £589.95 Amstrad CPC 1204 £599.95 Amstrad CPC 1214 £609.95 Amstrad CPC 1224 £619.95 Amstrad CPC 1234 £629.95 Amstrad CPC 1244 £639.95 Amstrad CPC 1254 £649.95 Amstrad CPC 1264 £659.95 Amstrad CPC 1274 £669.95 Amstrad CPC 1284 £679.95 Amstrad CPC 1294 £689.95 Amstrad CPC 1304 £699.95 Amstrad CPC 1314 £709.95 Amstrad CPC 1324 £719.95 Amstrad CPC 1334 £729.95 Amstrad CPC 1344 £739.95 Amstrad CPC 1354 £749.95 Amstrad CPC 1364 £759.95 Amstrad CPC 1374 £769.95 Amstrad CPC 1384 £779.95 Amstrad CPC 1394 £789.95 Amstrad CPC 1404 £799.95 Amstrad CPC 1414 £809.95 Amstrad CPC 1424 £819.95 Amstrad CPC 1434 £829.95 Amstrad CPC 1444 £839.95 Amstrad CPC 1454 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How to dump the contents of your screen to your printer.
By Iain Murray

AUTO SCREEN DUMPER

This program enables you to dump the contents of your TV screen to a dot matrix printer. It runs independently of BASIC once loaded, allowing you to load any another program and dump screen from it. The program being in of a BASIC loader which loads and executes the machine code routine.

How it works

BASIC program

- 00-000000
- 000-000000 load screen and check machine code data
- 000-000000 screen format
- 000-000000 print commands of machine code
- 110-000000 close BASIC loader (screen)
- 100-000000 save to SAVE before running
- 0000-0000 machine code data

Machine code

On receiving the control signal itself the dump routine prints all the data in the dump area of the 64 and is loop entered once every 1/60th of a second. A check is made for any of the keypad control keys, and if found, the routine receives mail from the interrupt again and dumps the screen contents. A character is read from the screen and converted to an ASCII value to be passed to the printer.

1> USING BASIC P :

**** COMODORE 64 BASIC V2 ****

64K RAM SYSTEM 38911 BASIC BYTES FREE

READY.
LOAD 'AUTO SCREEN DUMP'

PRESS PLAY ON TAPE
OK

SEARCHING FOR AUTO SCREEN DUMP
FOUND AUTO SCREEN DUMP
LOADING
READY.
LIST-00

10 REM *** AUTO SCREEN DUMPER ***
20 REM *** (C) IAIN MURRAY 1985 ***
30 REM *** FOR HOME COMPUTING WEEKLY ***

READY.
RUN

Once all characters have been printed, a control routine is entered and the routine continues until the whole screen has been output. The routine then prints mail back into the interrupt again. While printing the screen, execution of the current program will be postponed, and this will be resumed when the routine has finished its task.

Instructions for use

Type in and SAVE the BASIC loader. Now RUN and if no errors occur, the control codes for use will be printed, and the program will close from memory. To use the routine, simply hold down the CTRL key and press the desired letter (if available) which you want. There is no follow.

CTRL F This program, in the control printing mode, and would be used for printing a character of text.

CTRL W The output, with no space between lines of text, and would be used for printing graphics screens.

CTRL P As for CTRL F except that the text is printed in double width mode.

CTRL B As for CTRL W except that the text is printed both double width and without line spacing.

The routine can be used at any time while running a BASIC or

machine code program. In the program will keep running while the screen is printing. On completion the user program will continue. However, please note the following restrictions on the use of the routine:

1. The routine runs in the middle of the block of free BASIC RAM above the normal BASIC memory, beginning at 30000 and this area should not be used by any programs loaded afterwards. 30000-30000 is then for use.

2. Any programs which share the memory space will cause the routine to become unstable. Printing, STOP and RUN will also stop a basic working. Type 999999 to return the routine.

3. The routine prints ASCII characters to the printer. For output to normal characters and appear on the printer even if non-defined characters are shown on the screen.

4. Pressing one of the routine's control codes without a printer attached in use (at least the print screen display will be lost).

Making an conversion

Due to machine-specific address, the program could be defined as memory to another computer. The program expects to device number 100 and the machine code would have to be a version of another output device were required.

BACK TO BASICS

**Jersey resident
Cabin Wilton-Davies
invites you to draw
a mermaid using
Spectrum BASIC —
and win a game**

We ended up last time with a picture of a sailing boat on a very calm sea under a sunny sky. I hope that by the time most of you will have played around a bit with the simple line-drawing statements used, and will have introduced a few of the run-of-the-mill rights which give a sailor's eye. Such as merman, shark, mermaid, rough weather, mermaid — you can tell I kept my eyes open when I was at sea, can't you?

Let's have a little competition. Write a program in Spectrum BASIC to draw a mermaid and send it to me care of HCW. I'd prefer entries on cassette or Videotape to save time, and these will be returned to you if you enclose a self-addressed label. No monetary thanks — we've got our own club here in Jersey.

If you don't send a cassette with the program, your entry should be in the form of a PRINTED listing with a comma dump of the routine just the COPY statement on the 2 key. The readers of the tin box (in my opinion) will receive a copy of my Trackedown game, and will be able to compare the accuracy of their command with my girl on the telly. Entries must be in HCW within 28 days of the publication date of this article.

When you're sailing, even with self-propelled guns, the sighting of sharks and mermaids is a matter of luck or chance, and it is common to devote the outcome of a play on the throw of dice or the toss of a coin. The equivalent of this in a Spectrum

BASIC game is the RND function, obtained on the T key as stated mode.

Error is a direct command PRINT RND, and a number like 0.81124104 will appear on the screen. You can do this a lot of times before you will see the same number twice if you don't believe me, RUN this short program:

```
100 FOR i = 1 TO 100
110 PRINT RND
120 NEXT i
```

This will print a series of 100 numbers one below the other. As there isn't room for 100 lines of text on the screen, the Spectrum very politely waits when there are 23 on the screen and says "wait!" If you press SPACE, BREAK or N, the will interrupt the program at the point, any other key will send the numbers up the screen until the next 23 have appeared. It's very surprising if you find two numbers the same, but you won't find any smaller than zero or quite so big as one.

The numbers are actually generated by means of a complex formula, so are not truly random. Mathematically, they are "pseudo-random numbers between zero and one", which sounds rather than saying you are throwing a die with more than a million sides, but makes as much the same thing! The formula used starts with a "seed" in the Spectrum's memory which is a count of the number of TV frames preserved since it was switched on. If for some reason you want the random numbers to follow the same sequence (there's a contradiction), you can do this by using the RANDOMISE function, which is also on the T key. Change the title program above to that the first line is

```
100 FOR i = 1 TO 3
```

and each time you RUN it, you will get a different group of numbers. Now wait.

10 RANDOMIZE 10

and you will get the same sequence of pseudo-random numbers each time. These numbers are uncorrelated, which for many purposes means no simulating the throw of a die, if you try.

```
100 FOR i = 1 TO 4
110 LET n = RND * 4
```

```
120 PRINT n
130 NEXT i
```

You will get exactly to the last of things you would expect from throwing a die 40 times, four times the time.

```
120 LET n = INT(I4)
```

and you will get exactly the last of things you would expect from throwing a die 40 times, four times the time. What is done is to keep the part of a number less than 40 which is greater than one (20) and discard the rest (40), which is called the first valid part. Some dialects of BASIC have a FRAC function, which is the opposite of INT. The Spectrum doesn't have that, so you would use something like:

```
LET n = n - INT(n)
```

Anyway, you will probably find some errors in the sequence, and you certainly won't find any zero, so to make it more like dice-throwing you must add

```
130 LET n = n + 1
```

and you have a pretty good imitation of the throwing of a die. If you prefer, all this can be packed into one line:

```
140 LET n = INT(RND * 4) + 1
```

and you can wrap lines 110 to 130 inclusive.

Many traditional board games, including a well-known property trading game, use two dice, and some games use multiple dice. For example, poker dice are thrown in fives. Now it would be easy but wasteful to program five separate sequences of RND to generate appropriate random numbers and transfer these into card ranks. It's very common to compute in how jobs (large or small) which have to be done repeatedly and sometimes by different parts of a program. These jobs are called "sub-routines" and are accessed by the "GO SUB" statement. The end of the job is completed by the occurrence of a "RETURN" statement, which returns program control to return to the statement following the GO SUB. Let's suppose we have a game in which ordinary and poker dice are to be used.

```

100 REM mixed dice program
110 GO SUB 1000: REM throw die
120 CLS
130 BORDER 4
140 PRINT "You throw a % d
150 STOP
1600 REM die throw routine
1610 LET d=INT (RND*6) + 1
1620 RETURN

```

and you have a simple dice-throwing simulation which tells you what you throw and changes the border colour to match. Now add:

```

150 PRINT "You also throw 1--
160 FOR c=1 TO 5
170 GO SUB 1000: REM throw die

```

```

100 GO SUB 2000: REM a poker die
110 NEXT C
2000 REM poker die routine
2010 IF d=1 THEN PRINT "a Nine"
2020 IF d=2 THEN PRINT "a Ten"
2030 IF d=3 THEN PRINT "a Jack"
2040 IF d=4 THEN PRINT "a Queen"
2050 IF d=5 THEN PRINT "a King"
2060 IF d=6 THEN PRINT "an Ace"
2070 RETURN

```

Now you have the nucleus of a gambling game which I will leave to you to build up into something more interesting. You could use subroutines to play a different game for each "card", or go down different passes. If this inspires a gambling game, a variety of one per cent would be very acceptable!

Programs are always supplied on cassette and are accompanied by full details of the program variables, how the program works and any hints on conversion you can offer. Please type these details double spaced. Listings are helpful but not essential. What is vital is that the programs should be completely error free, so please double check.

Always use a coupon firmly fixed to the back of your envelope, and fully complete and enclose the cassette inlay card.

We are particularly interested in programs with less than 100 actual lines of BASIC. All submissions are acknowledged.

Send your programs to HCW!

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The cover of Micro Choice magazine, Volume 1, Number 1, is shown. The title "MICRO CHOICE" is prominently displayed at the top in large, bold, sans-serif capital letters. Below the title, the text "THE NEW HOME AND BUSINESS BUYER'S GUIDE" is visible. The central image depicts a woman with dark, curly hair sitting at a desk, looking at a computer monitor. The desk is cluttered with various electronic components and cables. The overall aesthetic is that of a vintage technology publication from the early 1980s.

SOFTWARE

TEXAS INSTRUMENTS
ANALOG MULTIMETER SYSTEM

13



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1541 GT LOADER CARTRIDGE

[illegible]

Word 3 This word will appear with your computer, providing a word without meaning. Be creative. Add the word to your list. It is not in the book, so use it.

1. The following information is for informational purposes only and is not intended to be used for any other purpose.

*** The authors thank the referees for their constructive comments.

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[illegible]

1. **Introduction**
 2. **Background**
 3. **Methodology**
 4. **Results**
 5. **Conclusion**
 6. **References**

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Several steps have been suggested:

Table 1



References

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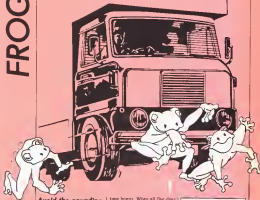
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John and Mary O'Brien, 1900. Photographed by Lewis H. Mumford.

SQUASHED FROG



Avoid the pounding lorries in this obstacle game by Paul Burke

In this version of the well-known arcade game you control the frog in an effort to reach safety.

You start out at the side of the road. Traffic is speeding by in both directions. Hop across the road avoiding the cars and lorries until you reach the river bank. Now jump on to the floating logs. Be careful not to fall in the river, as this means death.

Finally, jump into a den at the top of the screen and you will receive 500 points plus a

lure bonus. When all five dens are occupied you get a 1000 point bonus and go back to the start, the traffic and logs however now move a little faster. You are allowed a maximum of 30 seconds to get each frog home. You start off with three lives and win an extra one every second shot. When the game ends, if you have a high score you can enter your initials in the score table which holds the five best scores of the day. Controls are: T forward, H right, V back, R left.

To start the game press any key.

Variables

- A width of screen (25)
- C difference between screen and video memory (8192)
- F number of completed dens
- H still load the lorry is in the lorry the game is
- L number of lives left
- M score
- S&I sound register
- S+I video score
- T VIC's own timer

- T&S general-purpose variable
- V volume control
- AB coupled den out
- BT high screen away
- BB high screen's away
- BB used in GET statements
- DB controls a list of road markings
- GB used for frog printing routine
- TR VIC's on a internal clock
- QR constant (HDBAR) (HVCUR) (RNG) (WHT)

New Routines

- S&I initialise variables and arrays
- S set up the den for a new game
- A display number of lives left
- BA map part of game (S&S&R) score den and logs and screen log
- S&I deal log routine
- BB-BB frog has reached den routine
- BB-BB all dens filled
- BB-BB set up screen
- BB initialise machine code variables
- BB-BB routine to print in den the characters in CG
- BB-BB print den and high score table routine



QUAD WRANGLE



Mutant beachballs are out to crush you. Can you survive?
By Stephen Gray

An evil wizard has changed you into a ball, and put you in wobbly land. Your task is to change the land's color by jumping on the squares. Don't jump off the land — it's a big drop, and beware of the mutate beach balls which jump down to crush you.

Keys

North: move A
Northeast: A
South: move J
Southeast: J

How it works

99-999 mutation
976-948 game loop
976-948 ball subprogram
480-480 ball subprogram
996-480 game screen subprogram

876-528 66 to repeat sub-
program
528-576 draw table of square
subprogram
996-1128 subprogram sub-
program
1128-1140 main game
1170-5280 new level subprogram
1500-9548 new high score sub-
program
4250-4490 display high scores
subprogram
1796-4490 draw level subprogram

Variables

1% level
9% score
9% dead or not
8% squares filled in

85% ball coordinates
8% ability for ball to move
84% number of ball borders
4% timer
3% 17% turn coordinates
8% colour of square here's on
94% 9% level's last coordinates
8% has been moved or not?
4% which way turn is facing
4% colour of square to move
4% colour square's not
4% 17% ball line on
coordinates
8% game ball
94% 4% game loop
8% 8% high score array
996% squares of high scores
array
7% score

10 80N *****
20 80N * game screen *
30 80N * By Stephen Gray *
40 80N * for P.C.W. *
50 80N * DEC 1986, 1 *
60 80N * for sale *
70 80N *****
80 80N 7
90 80N 100
100 80N 100, 100
110 80N 100, 100, 100
120 80N 100, 100, 100
130 80N 100, 100, 100
140 80N 100, 100, 100



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**IF YOU USE YOUR COMPUTER TO
PLAY GAMES, THEN YOU CAN'T
AFFORD TO MISS.**

Computer GAMER

This fantastic new magazine appears on March 22 1988 and on the fourth Friday of every month after at the price of 98p.

Each issue will be produced in cooperation with Etsaan our Interplanetary Adviser who on his home planet, Aergon, is a member of the Association of Supreme Players. He will be monitoring developments in the games industry and advising Computer Gamer readers with all their gaming problems. Included in each issue will be pages of review of the latest games releases, special Adventure features and a help-line, invaluable articles on how to 'crack' specific games a high-score page, exciting programs to type in for most of the popular home computers, news, competitions, reviews of peripherals and computers themselves if relevant to the games field and LOTS more.



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MAKE LIFE EASIER

Shingo Sugura
continues his series
on user defined
characters — and
shows you some
short cuts

As I explained in my last article, user defined characters are very useful for games programs and are easy to make. However, the process is time consuming and it would be nice if you could define the characters on an electronic graphic, paste with you simply having to fill in the appropriate data and the computer calculating the values for each row. Well, a program to do just that will be posted in several columns over the coming weeks. In each article, a feature will be thoroughly explained. So it should prove a useful programming feature as well as providing you with an invaluable tool!

First we must decide what facilities we want from this utility program. Obviously, we must be able to define a character on an enlarged grid. We also want it to be shown as real time as we design the character is enlarged mode. If the basis of the program is a large grid in which you can move about via the cursor keys and each dot may be filled or defined with you. While we are at it, we might as well give the number for each row.

Now that we've decided on the basis of the utility, we need the "tools". I have decided to include the usual facilities such as clear grid, cursor left/right, down, up/down and mirror. All these facilities may be used during design.

Probably the most important facility is save, which you



allow you to save the characters in BASIC format, with an "ENDU25 124 123 25 34 45 23 41 66 34". This is useful if you design lots of characters as you go but is often neglected for some reason.

I believe the quickest way to write a program is to write modularly, that is to say, write the program in small distinct sections. Also, definitely no GOTOs or GOSUBs! Recently, there's been a big debate over this and some people seem to avoid using GOTOs without knowing why. Well, writing GOTOs slows down program development and also makes debugging a pain in the neck. Because of the inclusion of procedures in BBC BASIC, you can start writing a program by a mixture of code such as the one shown below.

1. PROC CLEAR

2. PROC GET

and I could

You can immediately see the structure of the program and see we have hardly written any code! In this way, you can write PROCEDURE "main", then PROCEDURE "main", then debug that and so on. It also means that if you find a bug in a later stage, you can quickly track it down and deal with it.

So to finish off, I will leave you with the first few lines of the program. As you can see it's just a series of PROC. statements. All that's left is to add the various procedures! That's a job for week in my next article, I will go on to the main procedures.

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15250 PROC CLEAR
15260 PROC GET
15270 PROC PUT
15280 PROC CLEAR
15290 PROC GET
15300 PROC PUT
15310 PROC CLEAR
15320 PROC GET
15330 PROC PUT
15340
```

PERIPHERAL



Richard Sewley gives the thumbs-up to Micro Pulse's ROM Box

One of the BBC's most useful design points is its ability to use up to 16 paged ROMs. One of its major design faults is that there are only four sockets provided for such programs to occupy. This means that many users have a need for more ROM space and there is a whole range of options available: internal and external ROM boards, ROM erasable options and even ROM based emulators which allow you to load such programs from disc instead of cassette. The question is which one of these options best suits your needs and is available at the right price.

This product from Micro Pulse may seem slightly strange at first glance. It is so named ROM Box with space for eight ROMs but only one of which can be used at a time. This might be construed by some as a minor design conceit, why have eight sockets and only be able to use one?

I have to disagree. Having used the box for a number of weeks I find that not only does it fulfil a purpose but it can make life much easier for the writer BBC user and reviewer.

The unit is supplied as a crate coloured box, containing

cables, instructions sheet and guarantee. Inside is a completely useful and the explanation sheet is quite specific, although a diagram might help those less familiar with the machine.

The cable leads from the right hand side of the BBC unit and can be tidily clipped into position when you screw the case back together. This then connects to the box via an isolation, displacement test meter. This is an excellent feature as it makes the BBC safe to transport and the best well cableless.

At the top right of each socket there is a red LED, which responds to the power which opens the ROM to be powered. This too is a good design feature and there is usually through the perspex cover which programs is ready for use. As all the ROMs are memory mapped into the same area and share a single register however, they can be read/written with the BBC power on and then called as required.

One of the sockets is a non-invertible logic socket and this allows very easy exchange of ROMs with no damage possible to either ROM or board. You simply place it between the "pins" and then clamp them down. All the other sockets are of the usual mass board type box as of a very high quality.

It thought at first that this box would only have been of use for language ROMs which you only use once in a while, and then it flew in how many use it. I find however that it can also be

used very effectively with utility ROMs. The instructions tell that you need to select the ROM and then press CTRL+PAGE, but I find that if you are debugging between the two ROMs that this is unnecessary and you only need to call the routine you want. You do have to press BREAK when changing from one language to another, however.

In summary, I have to declare that this is a very well built and designed product. It seems a little expensive but is certainly the Rolls Royce of such units. All of the design features contribute to its simplicity and it will be of very great use to those who have a number of ROMs which they use occasionally but not enough to justify their taking space on the main board.

There are no problems of overloading and none of the ROMs in the system I used interfered with any of the others. It can prove to be used with an external ROM board and allows you to have up to 25 ROMs attached to the BBC, with 16 in use at any one time.

R.S.

Price £79.95

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BBC



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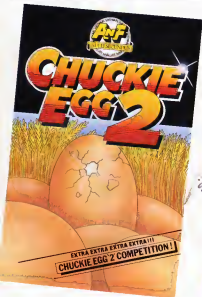
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